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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/696,558 | 10/30/2003 | Isao Tomisawa | Q78214 | 5901 |

23373 7590 06/25/2007

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| EXAMINER |
|---|
| SHERMAN, STEPHEN G |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2629 | |

| MAIL DATE | DELIVERY MODE |
|---|---|
| 06/25/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/696,558 | TOMISAWA ET AL. | |
| | Examiner | Art Unit | |
| | Stephen G. Sherman | 2629 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *21 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-7 and 9-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7 and 9-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 21 May 2007 has been entered. Claims 1-7 and 9-27 are pending. Claims 8 and 28 have been cancelled.

### *Response to Arguments*

2. Applicant's arguments filed 21 May 2007 with respect to claims 1-7 and 9-27 have been fully considered but they are not persuasive.

On page 12 of the applicant's response the applicant states in the first paragraph that "...Hiroaki does not disclose or suggest the claimed features above. For example, the reference does not suggest a control device that generates an operation signal, which corresponds to the specified image portion and that controls an electronic device, as claimed." The examiner respectfully disagrees. As explained in the rejection found below, the examiner believes that Hiroaki does teach the claimed features that the

applicant says the reference does not teach. Therefore, the rejection is maintained. The applicant then argues the rejections of claims 2-7 and 9-27 by stating the same reasons as those for claim 1. Therefore, since the examiner has explained that Hiroaki teaches the new features of clam 1 then the rejections of claims 2-7 and 9-27 are also maintained.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-6, 9-12, 14, 16-20, 22 and 25-27 are rejected under 35 U.S.C. 102(e) as being anticipated by Hiroaki (US 6,661,425).

***Regarding claim 1***, Hiroaki discloses a display apparatus comprising:

a three-dimensional display device having a plurality of display surfaces (Figure 1 shows display surfaces 122 and 123.);

an image generation device that generates images to be displayed on the three-dimensional display device (Figure 1 shows image generation unit 100, where the

original image 20 is received by image generation unit for generating the different images to be displayed on the displays 122 and 123, see column 8, lines 50-61.);

an image specification device that enables at least part of an image, which is displayed on the three-dimensional display device, to be specified (It is stated in column 9, lines 28-37 that the superposed states is based upon input from the input device 125, which means that the input device 125 is an image specification device. Se also Figure 8 which show how a user selected a button to allow the specification of item 4 on the display.); and

a control device that controls the three-dimensional display device to display, of the images generated, an image portion specified by the image specification device, on one of the plurality of display surfaces and display, of the images generated, an image portion, which is not displayed on said one of the plurality of display surfaces, on another display surface of the plurality of display surfaces (Figure 1 shows control unit 110, in which is controlling unit 111 which is configured to send information designating the superposing area and control unit 110 also contains base image generating unit 115 for outputting a base image, as explained in column 8, line 62 to column 9, line 27.),

wherein an electronic device is electrically connected to the control device (Column 2, lines 43-57 explain that a display is used to display a GUI or "desk top area", which would inherently come from a computing device, i.e. an electronic device, which would be connected to the display, which means that it would be connected to the control unit.);

wherein the control device generates an operation signal corresponding to the image portion specified by the image specification device and controls the electronic device with the operation signal (Figure 1 shows control signal 10, which is labeled as "designate superposing image area". The examiner understands that in order for the operation of the button/icon selected to operate, the computing device would need to know what button/icon was selected in order for the computer to operate the function, meaning that the computing device would also inherently receive a control signal to designate which button/icon was selected.),

wherein the control device controls, in accordance with an operation state of the electronic device to which the operation signal is supplied, the three-dimensional display device to display images that are indicative of operable keys with which the electronic device can be operated, on said one of the plurality of display surfaces, and to display other images that are indicative of non-operable keys on said another display surface (Figure 8 shows to display states. The first display state is shown in Figure 8a, where none of the buttons, i.e. "keys," have been selected. Figure 8b shows where a user has selected the button, i.e. "key," labeled as item 4. As shown, when the button is specified it is raised to a different level of the three dimensional display and becomes a par of the superposed image. Therefore item 4 is on a different display surface which represents an operable button, and the other buttons labeled items 1-3 are on a bottom display surface which represents the non-operable buttons [refer to column 28, lines 51-62]. Since as explained above, the control device controls the images, it will also control the superposition of the images shown in Figure 8 as well.).

***Regarding claim 2***, Hiroaki discloses the display apparatus according to claim 1, wherein the image specification device enables the image portion to be specified based on results of a determination of predetermined items or a conditional branch (Figure 8 shows that the buttons which can be selected as predetermined, so superposing items 1-4 would b predetermined items for superposition.).

***Regarding claim 3***, Hiroaki discloses the display apparatus according to claim 1, wherein the image specification device enables the image portion to be specified through an external input operation (Refer to the explanation in claim 1, where the input device 125 shown in Figure 1 allows for a user to select the button shown in Figure 8.).

***Regarding claim 4***, Hiroaki discloses the display apparatus according to claim 3, wherein the image specification device includes at least one of a pointing device, a touch screen, which is superimposed on the three-dimensional display device and a space sensor (Column 19, lines 50-56).

***Regarding claim 5***, Hiroaki discloses the display apparatus according to claim 1, wherein the control device controls the three-dimensional display device to display the image portion specified by the image specification device and the image portion associated therewith on said one of the plurality of display surfaces (As explained in the rejection of claim 1, Figure 1 shows control unit 110, in which is controlling unit 111

which is configured to send information designating the superposing area and control unit 110.).

***Regarding claim 6***, Hiroaki discloses the display apparatus according to claim 1. further comprising an image selection device that selects images, which are to be displayed subsequently on the plurality of display surfaces in correspondence with the image portion specified by the image specification device, from images generated by the image generation device, wherein the control device controls the three-dimensional display device to display at least part of the image as selected on said one of the plurality of display surfaces in place of or in addition to the image portion specified by the image specification device (Figure 1 shows the base image generating unit 115 that generates a base image dependent on the image chosen for superposition, where the base image is shown in addition to the image which is superposed.).

***Regarding claim 9***, Hiroaki discloses the display apparatus according to claim 1, wherein the control device controls the three-dimensional display device to display part of the image generated by the image generation device on said one of the plurality of display surfaces in an initial state (Figure 8a shows that the images are in an initial state, which would be specified by the control unit 110 since the control unit controls the superposed images as explained in the rejection of claim 1.).

***Regarding claim 10***, this claim is rejected under the same rationale as claim 1.

***Regarding claim 11***, Hiroaki discloses the display apparatus according to claim 1, wherein said one of the plurality of display surfaces is placed on a side of an observer (Figure 6 shows that display 122 is on a side of the user.).

***Regarding claim 12***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion specified by the image specification device is displayed with high brightness on the one of the plurality of display surfaces (Column 16, lines 7-12 explain that the superposed image can be displayed with a higher brightness.).

***Regarding claim 14***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion specified by the image specification device is displayed in an enlarged state under a predetermined magnification on the one of the plurality of display surfaces (Figure 8 shows that as the screen is specified by a user that the displayed image of item 4 moves to the foreground screen, meaning that to the user this image will appear larger.).

***Regarding claim 16***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion not specified by the image specification device is displayed with low brightness on the other display surface (Column 16, lines 7-12 explain that the image that is not the superposed image can be displayed with a low brightness.).

***Regarding claim 17***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion not specified by the image specification device is displayed in predetermined colors on the other display surface (The examiner interprets that since the image is already going to be displayed in color, that the image portion not selected is going to be display in these predetermined colors on one of the display surfaces.).

***Regarding claim 18***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion not specified by the image specification device is displayed in a reduced state under a predetermined magnification on the other display surface (Figure 8 shows that as the screen is specified by a user that the displayed image of item 4 moves to the foreground screen, meaning that to the user this image will appear larger, and the image of items 1-3 which remain on the background display will appear smaller compared to the image of item 4.).

***Regarding claim 19***, Hiroaki discloses the display apparatus according to claim 1, wherein, of the plurality of display surfaces, display surfaces other than at least a rearmost-side display surface comprise semitransparent display devices (Figure 6 and column 24, lines 32-43).

***Regarding claim 20***, Hiroaki discloses the display apparatus according to claim 19, wherein the semitransparent display devices are liquid crystal display devices or Electro-Luminescence display devices (Column 18, line 2).

***Regarding claim 22***, Hiroaki discloses the display apparatus according to claim 1, wherein the plurality of display surfaces of the three-dimensional display device are disposed in tandem in a direction of a line of sight of an observer (Figure 6).

***Regarding claim 25***, this claim is rejected under the same rationale as claim 1.

***Regarding claim 26***, this claim is rejected under the same rationale as claim 1.

***Regarding claim 27***, this claim is rejected under the same rationale as claim 1.

## *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroaki (US 6,661,425).

***Regarding claim 13***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion specified by the image specification device is displayed in predetermined colors on the one of the plurality of display surfaces (Column 1, lines 63-65.).

Therefore it would have been obvious to one of ordinary skill" in the art at the time the invention was made to use the teaching of the prior art in the display device of Hiroaki in order to allow further recognition to the user that the button has been pressed.

***Regarding claim 15***, Hiroaki discloses the display apparatus according to claim 1, wherein the image portion specified by the image specification device is displayed with light blinking in a predetermined cycle on the one of the plurality of display surfaces (Column 1, lines 63-65.).

Therefore it would have been obvious to one of ordinary skill" in the art at the time the invention was made to use the teaching of the prior art in the display device of Hiroaki in order to allow further recognition to the user that the button has been pressed.

8. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroaki (US 6,661,425) in view of Engle (WO 02/084637 A1).

***Regarding claim 7***, Hiroaki discloses the display apparatus according to claim 1.

Hiroaki fails to teach wherein the image specification device enables at least part of the image portion, which is displayed on said one of the plurality of display surfaces, to be further specified and disables the image portion displayed on the other display surface from being specified.

Engle discloses a display apparatus wherein the image specification device enables at least part of the image portion, which is displayed on said one of the plurality of display surfaces, to be further specified and disables the image portion displayed on the other display surface from being specified (Figure 1 shows that the cursor is moved between screens 1 and 2 and when it is on screen 1 it can only be moved on screen 1, which disables the items shown on display 2 from being selected and/or modified.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to us the surface selection as taught by Engle with the multiple display surface device taught by Hiroaki in order to allow a user to interact individually with the different surface levels of the displays such that user interaction can be enhanced.

9. Claims 21 and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiroaki (US 6,661,425) in view of AAPA (Page 1, line 11 to page 3, line 9.).

***Regarding claim 21***, Hiroaki discloses the display apparatus according to claim 1.

Hiroaki fails to teach wherein the plurality of display surfaces include composite display surfaces through half-mirrors.

AAPA discloses of a plurality of display surfaces including composite display surfaces through half-mirrors (Page 2, lines 13-19).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the plurality of display surfaces taught by Hiroaki include composite surfaces through half-mirrors as taught by AAPA in order to allow a semi-transparent object or an object behind to be seen through.

***Regarding claim 23***, Hiroaki discloses the display apparatus according to claim 1.

Hiroaki fails to teach wherein the three-dimensional display device is a three dimensional display device, which utilizes any one of a barrier system having slits or pin-holes, and includes an image to be displayed for a left eye of an observer and an image to be displayed for a right eye of the observer, as the plurality of display surfaces.

AAPA discloses of a three-dimensional display device which utilizes any one of a barrier system having slits or pin-holes, and includes an image to be displayed for a left eye of an observer and an image to be displayed for a right eye of the observer, as the plurality of display surfaces (Page 1, line 11 to page 2, line 1 explain that shutter glasses are used to shield the right and left eyes so as to provide for the three

dimensional image, where the examiner interprets that the glasses would contain slits such that the user to could the display.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the plurality of display surfaces taught by Hiroaki into a barrier system having slits as taught by AAPA in order to provide an alternative method to providing the three dimensional display to the observer.

***Regarding claim 24***, Hiroaki discloses the display apparatus according to claim 1.

Hiroaki fails to teach wherein the three-dimensional display device is a three-dimensional display device, which utilizes a lenticule system and includes an image to be displayed for a left eye of an observer and an image to be displayed for a right eye of the observer, as the plurality of display surfaces.

AAPA discloses of a three-dimensional display device which utilizes a lenticule system and includes an image to be displayed for a left eye of an observer and an image to be displayed for a right eye of the observer, as the plurality of display surfaces (Page 1, line 11 to page 2, line 1 explain that shutter glasses are used to shield the right and left eyes so as to provide for the three dimensional image, where the examiner interprets that the glasses would contain slits such that the user to could the display.).

Therefore it would have been obvious to "one of ordinary skill" in the art at the time the invention was made to make the plurality of display surfaces taught by Hiroaki

include a lenticule system as taught by AAPA in order to provide an alternative method to providing the three dimensional display to the observer.

***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SS

19 June 2007

AMR A. AWAD
SUPERVISORY PATENT EXAMINER